

ESTIMATED VALUE OF PROPERTY SAVED BY
WARNINGS—Continued

EAST GULF OF MEXICO DRAINAGE

Apalachicola River in Florida.....	\$4, 000
Etowah River in Georgia.....	1, 000
Black Warrior River in Alabama.....	7, 500
Tombigbee River in Mississippi and Alabama.....	25, 250
Pascagoula River in Mississippi.....	21, 200
Pearl River in Mississippi.....	2, 075

MISSISSIPPI SYSTEM—UPPER MISSISSIPPI BASIN

Wisconsin River in Wisconsin.....	2, 850
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MISSISSIPPI SYSTEM—MISSOURI BASIN

Big Sioux River in Iowa.....	36, 800
Floyd River in Iowa.....	210, 000
Grand River in Missouri.....	800, 000

MISSISSIPPI SYSTEM—OHIO BASIN

Allegheny River in Pennsylvania.....	50, 000
Monongahela River in Pennsylvania.....	200, 000
Barren River in Kentucky.....	10, 000
Green River in Kentucky.....	10, 000

ESTIMATED VALUE OF PROPERTY SAVED BY
WARNINGS—Continued

MISSISSIPPI SYSTEM—OHIO BASIN—continued

Cumberland River in Tennessee.....	\$21, 100
Elk River in Tennessee.....	2, 000
Duck River in Tennessee.....	2, 000
Tennessee River in Tennessee.....	20, 000
Ohio River in Indiana and Kentucky.....	80, 156

MISSISSIPPI SYSTEM—WHITE BASIN

White River in Arkansas.....	11, 300
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MISSISSIPPI SYSTEM—ARKANSAS BASIN

Petit Jean River in Arkansas.....	500
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MISSISSIPPI SYSTEM—RED BASIN

Ouachita River in Arkansas.....	22, 500
Sulphur River in Texas.....	55, 500

WEST GULF OF MEXICO DRAINAGE

Sabine River in Texas.....	12, 000
Trinity River in Texas.....	15, 000

Total estimated savings for the United States. 1, 962, 331

WEATHER OF THE ATLANTIC AND PACIFIC OCEANS

(The Marine Division, W. F. McDONALD in charge)

NORTH ATLANTIC OCEAN, DECEMBER 1934

By H. C. HUNTER

Atmospheric pressure.—The abnormally low pressure in the general region of the Azores, which prevailed during the final week of November, continued to be a feature of North Atlantic weather during a great part of December 1934, although there and in other southeastern portions of the ocean area the barometer was comparatively high from the 15th to 21st, and again during the final 5 days. Over higher northern latitudes low pressure prevailed throughout the month, particularly near Ireland, where the December average pressure at Valencia was 29.35 inches, more than half an inch below normal, and readings were at all times below 30 inches.

The West Indies and Gulf regions averaged a little above normal pressure. At Bermuda the opening week of December was marked by rather high barometer, but the second week by low.

The highest reading so far reported by a vessel was 30.53 inches on the 20th, by the British steamship *Camito*, about latitude 40° north, longitude 48° west. The lowest pressure was 27.81 inches, encountered by the American steamship *Minnequa*, late on the 24th, near 56° north, 27° west. At about the same longitude, but near 50° latitude, several steamers noted readings almost as low when within an intense storm area during the night of the 13th–14th.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure (sea level) at selected stations for the North Atlantic Ocean and its shores, December 1934

Station	Average pressure	Departure	Highest	Date	Lowest	Date
	<i>Inches</i>	<i>Inch</i>	<i>Inches</i>		<i>Inches</i>	
Julianehaab, Greenland.....	29.33		29.91	1	28.85	26
Reykjavik, Iceland.....	29.41	—0.06	29.98	4	28.57	11
Lerwick, Shetland Islands.....	29.55	—0.17	30.24	25	29.10	15
Valencia, Ireland.....	29.35	—0.59	29.92	1, 31	28.48	15
Lisbon, Portugal.....	30.10	—0.01	30.52	31	29.78	9
Madeira.....	30.16	+0.07	30.32	30, 31	30.01	12
Horta, Azores.....	29.90	—0.24	30.31	19	29.45	24
Belle Isle, Newfoundland.....	29.48	—0.22	30.18	4	28.64	21
Halifax, Nova Scotia.....	29.87	—0.08	30.34	19	29.04	20
Nantucket.....	30.00	—0.05	30.45	3	29.16	20
Hatteras.....	30.11	—0.02	30.45	27	29.62	19
Bermuda.....	30.07	—0.05	30.38	24	29.60	11, 12
Turks Island.....	30.06	+0.03	30.13	3, 16	29.91	11
Key West.....	30.10	+0.02	30.32	12	29.91	11
New Orleans.....	30.19	+0.06	30.49	11	29.85	18

NOTE.—All data based on a. m. observations only, with departures compiled from best available normals related to time of observation, except Hatteras, Key West, Nantucket, and New Orleans which are 24-hour corrected means.

Cyclones and gales.—Seldom has the North Atlantic Ocean known so stormy a month as December 1934. The number of gale reports in hand at this writing is 283, of which 15 state the highest wind force as 12, and 35 as 11; it is not feasible to present all of the latter group of reports in the accompanying table.

East of Newfoundland the storm centers were usually located north of the chief steamship lanes, so that the strong winds were nearly all from a westerly direction. A characteristic report was that of the American steamship *West Kyska*, bound from Bremen to Panama City, Fla., which left the English Channel late on the 14th, and thereafter, till near 41° N., 25° W., late on the 21st had wind always from a westerly point and at no time of force less than 6.

For the first few days of December the storm activity was not unusually great for the time of the year. But by the 4th a vigorous low was central near Nova Scotia, from whence it advanced to east-northeast and later northeast, till on the 10th it was south of Iceland. Chart VIII, for the 8th, shows this storm affecting a large area near and to eastward of midocean; such fully developed storminess was typical of the period from the 5th to the 20th. A lesser disturbance also is indicated on chart VIII near Cape Hatteras; it had already gained considerable intensity in its progress northward from the region of the Bahamas during the preceding 2 days, and continued to intensify with further progress north-eastward.

Chart IX, for December 11, shows this storm center near midocean and of great intensity. Gales were prevailing on the 11th and 12th from the Bahamas to the Irish coast. Another low was again developing near the American coast, somewhat to eastward of Delaware Bay, traveling northeastward, and behind it the eastern part of the United States was experiencing a marked cold wave.

The storm just mentioned as near Delaware Bay was of great energy by the 13th, centered not far from the Grand Banks, and the situation of that date is shown on chart X. In this storm near 50° N., 35° W., the British steamship *Usworth*, from Montreal for Great Britain, was in distress, and on December 14th she was abandoned; 15 of her crew and 2 officers engaged in the work of rescue

from the Belgian steamship *Jean Jadot*, lost their lives by a boat capsizing. The other 11 men of the *Usworth* were rescued by the *Jean Jadot* and the British steamship *Ascania*.

On the 15th another energetic low was near Newfoundland, and advanced eastward till the situation of the 18th appearing on chart XI, had developed. That day the Norwegian steamship *Sisto* was abandoned, about 500 miles west of Ireland, the German liner *New York* rescuing all hands.

From the 20th onward, the storms traversing the North Atlantic, though important, were usually less intense, especially near the route from northern United States ports to the English Channel. The chief low of this period was, however, well developed on the 24th and 25th, when central about midway between northern Newfoundland and northern Ireland.

While only two major casualties due to stress of weather in December have come to notice, as reported above,

the widespread and severe storminess caused much minor damage to shipping, in boats and gear lost or smashed, and in strained plates and damage to superstructures.

Fog.—Scarcely any fog was reported during December from the Grand Banks region. Over the eastern part of the ocean, however, there was somewhat more than during November, chiefly near the fiftieth parallel, between 30° W. and the British and French coasts, the first 4 days of the month being the notable time of occurrence.

In the vicinity of the American coast, from Nova Scotia to South Carolina, some fog occurred on various dates, the principal period being about the 11th to southward of the fortieth parallel. The square from 35° to 40° N., 70° to 75° W., furnished reports of fog on 6 different days altogether. In the northwestern part of the Gulf of Mexico some fog was encountered about the 18th, and again during the final 5 days of December.

OCEAN GALES AND STORMS, DECEMBER 1934

Vessel	Voyage		Position at time of lowest barometer		Gale began December—	Time of lowest barometer December—	Gale ended December—	Lowest barometer	Direction of wind when gale began	Direction and force of wind at time of lowest barometer	Direction of wind when gale ended	Direction and highest force of wind	Shifts of wind near time of lowest barometer
	From—	To—	Latitude	Longitude									
NORTH ATLANTIC OCEAN													
Silverteak, Br. M. S.	Gibraltar	Halifax	38 02 N.	32 51 W.	2	3p, 2	2	29.54	SW	SW, 10	WNW	SW, 10	WNW-SW-WNW
City of Joliet, Am. S. S.	Malmo	Tampico	36 55 N.	28 13 W.	2	9p, 2	3	29.56	SW	SW, 10	WNW	SW, 10	SW-W
Nishmaha, Am. S. S.	Hamburg	New Orleans	39 45 N.	25 48 W.	3	2a, 3	5	29.43	WSW	SSW, 7	WNW	WNW, 9	S-W
Lucia C., Ital. S. S.	Galveston	Algiers	38 22 N.	20 43 W.	5	2a, 5	5	29.60	SSW	SSW, 10	SSW	SSW, 10	None
Rotterdam, Du. M. S.	Rotterdam	Baton Rouge	41 56 N.	24 41 W.	4	4a, 5	8	29.30	SW	WSW, 9	WSW	WSW, 9	None
Bennekom, Du. S. S.	Curacao	Liverpool	43 10 N.	23 40 W.	3	11a, 5	5	29.19	WNW	WSW, 9	NW	WSW, 9	None
Svanhild, Dan. S. S.	Bremen	Norfolk	45 57 N.	54 18 W.	5	do	6	28.82	S	SW, 10	NW	SW, 11	S-SW-WNW
Blankaholm, Swed. M. S.	Gothenburg	New York	45 35 N.	56 35 W.	5	1p, 5	6	28.98	SW	W, 10	NW	NNW, 11	SW-W-NW
Boston City, Br. S. S.	Fowey	Portland, Maine	46 16 N.	43 40 W.	5	4p, 6	8	28.65	S	W, 10	W	W, 11	WSW-W
Lord Kelvin, Br. S. S.	London	Halifax	46 24 N.	38 18 W.	6	10p, 6	8	28.68	S	W, 8	WNW	W, 11	Steady
City of Baltimore, Am. S. S.	Havre	Norfolk	47 22 N.	33 45 W.	7	Noon, 7	8	28.62	WSW	WSW, 7	WSW	WSW, 11	None
Nerissa, Br. S. S.	New York	St. Thomas	33 00 N.	70 37 W.	8	2a, 8	8	29.31	S	SW, 9	NW	WSW, 9	S-SW-NW
Indiana, Fr. S. S.	Antwerp	Guadeloupe	40 05 N.	22 15 W.	7	5a, 8	9	29.37	SSW	WSW, 11	WSW	W, 12	W-SW
Cheyenne, Br. M. S.	Philadelphia	London	43 15 N.	42 37 W.	6	9a, 8	8	23.58	WNW	WNW, 11	WNW	WNW, 11	None
J. A. Moffett, Jr., Am. M. S.	Havre	Aruba	42 25 N.	23 38 W.	7	1p, 8	9	29.20	WNW	W, 10	WNW	W, 12	WSW-WNW
Birmingham City, Am. S. S.	Bristol	Baltimore	38 15 N.	59 40 W.	8	3p, 8	8	23.15	ESE	SW, 9	WNW	SW, 10	S-SW-W
Ajax, Du. S. S.	Amsterdam	San Juan	41 23 N.	14 38 W.	8	10p, 8	9	29.37	SW	SW, 11	WSW	SW, 12	SW-NW
Sagaporack, Am. S. S.	Copenhagen	New York	44 00 N.	51 00 W.	9	1a, 9	9	29.02	W	S, 6	W	SW, 12	SE-S-W
Paris, Fr. S. S.	Havre	do	47 01 N.	45 36 W.	9	1p, 9	9	29.02	SW	WSW, 10	WSW	WSW, 10	SE-WSW
Brasilien, Dan. S. S.	Buenos Aires	Copenhagen	48 51 N.	4 50 W.	9	5a, 10	10	28.99	SW	SSW, 11	WSW	SSW, 12	SSW-WSW
Bremen, Ger. S. S.	Cherbourg	New York	49 00 N.	27 24 W.	10	1p, 10	11	29.11	W	W, 11	W	W, 11	None
West Camack, Am. S. S.	New Orleans	Huelva	35 08 N.	61 09 W.	11	3a, 12	12	29.35	SW	S, 7	SW	SW, 9	SW-S-W
New Brunswick, Br. S. S.	Freetown	Boston	33 21 N.	54 16 W.	12	6p, 12	13	29.72	S	SSW, 10	W	SSW, 10	S-SW-W
Kentucky, Dan. S. S.	Norfolk	Rotterdam	46 50 N.	34 40 W.	13	9p, 13	14	28.66	SW	W, 12	WNW	W, 12	WSW-WNW
Black Gulf, Am. S. S.	Rotterdam	New York	50 34 N.	30 13 W.	13	Mdt, 13	14	27.93	SW	WSW, 11	NW	WSW, 11	SW-WSW-N
Mobile City, Am. S. S.	Swansea	Portland, Maine	49 45 N.	25 10 W.	13	3a, 14	14	28.08	S	WSW, 10	NW	NW, 10	SW-NW
Motocarine, Belg. M. S.	Antwerp	Baytown	43 52 N.	24 00 W.	13	4a, 14	15	29.26	WSW	WSW, 9	WNW	W, 10	WSW-W
Pipestone County, Am. S. S.	New York	Havre	48 48 N.	25 32 W.	13	do	15	28.91	WSW	W, 11	NW	W, 11	WSW-WNW
Sarcosie, Am. S. S.	Bordeaux	New York	43 26 N.	22 24 W.	14	6a, 14	14	29.41	W	W, 9	WNW	W, 10	W
Black Falcon, Am. S. S.	New York	Rotterdam	48 59 N.	23 07 W.	14	do	15	28.40	WSW	WSW, 9	WNW	WNW, 10	WSW-W
Tymeric, Br. S. S.	Port Royal	Liverpool	48 13 N.	23 50 W.	13	do	15	28.42	WSW	WSW, 12	NW	WSW, 12	WSW-W
Jamaica Producer, Br. S. S.	Kingston	Rotterdam	49 24 N.	14 36 W.	13	Noon, 14	15	28.45	WSW	SW, 10	W	SW, 10	WSW-SW
General Gassouin, Fr. M. S.	New York	Antwerp	48 55 N.	19 00 W.	13	do	15	28.40	W	WSW, 10	WNW	W, 12	WSW-WNW
New Brunswick, Br. S. S.	Freetown	Boston	35 52 N.	59 40 W.	13	3p, 14	16	29.66	SW	W, 7	NNW	NW, 12	W-NW
Yuri Maru, Jap. S. S.	Schiedam	New York	49 50 N.	7 19 W.	14	6p, 14	15	28.35	SSW	SSW, 10	W	WSW, 12	SSW-SW
Waban, Am. S. S.	New Orleans	London	35 05 N.	62 03 W.	15	8a, 15	16	29.79	NW	NW, 7	W	NW, 10	W
Tabinta, Du. M. S.	Gibraltar	Halifax	35 48 N.	39 20 W.	16	8a, 16	16	29.59	SSW	S, 10	WNW	W, 11	S-WSW
Lochkatrine, Br. M. S.	Cristobal	Liverpool	44 13 N.	40 16 W.	16	2p, 16	17	28.49	SE	WSW, 10	WNW	WSW, 12	SSW-WSW
West Eldara, Am. S. S.	Antwerp	Boston	49 17 N.	36 52 W.	16	9p, 16	17	28.12	E	NNE, 11	W	N, 11	E-NNE-N
Pres. Harding, Am. S. S.	Southampton	New York	49 24 N.	23 00 W.	17	10a, 17	18	28.67	SW	SW, 10	SW	WNW, 11	W-NW
Tennessee, Dan. S. S.	Bremen	Norfolk	50 21 N.	12 47 W.	17	11a, 18	19	29.95	SW	W, 10	W	NW, 11	W-NW
Waban, Am. S. S.	New Orleans	London	39 05 N.	45 10 W.	19	9a, 19	19	29.92	W	NW, 10	NW	NW, 10	S-SW
Caledonia, Br. S. S.	Glasgow	New York	41 12 N.	65 40 W.	20	4a, 20	20	29.24	SSE	S, 9	WNW	W, 10	S-SW
Tabinta, Du. M. S.	Gibraltar	Halifax	42 19 N.	58 02 W.	20	2p, 20	21	29.32	S	SW, 11	WNW	S, 12	S-SW-W
Sarcosie, Am. S. S.	Bordeaux	New York	43 00 N.	45 30 W.	20	2a, 21	21	29.64	SSW	SW, 11	WNW	SW, 11	SW-WNW
London Corporation, Br. S. S.	Philadelphia	Liverpool	40 04 N.	64 20 W.	22	2p, 22	24	29.83	ENE	ENE, 8	N	NNW, 10	ENE-NE
Exarch, Am. S. S.	Casablanca	New York	36 18 N.	44 25 W.	23	1p, 23	24	29.30	SSW	SSW, 9	NW	WNW, 10	SSW-WNW
Mahrona, Br. S. S.	Boston	London	46 00 N.	37 43 W.	22	5p, 23	24	28.50	NW	N, 7	W	NE, 11	NE-N-W
McKeesport, Am. S. S.	Havre	New York	44 50 N.	28 53 W.	23	1a, 24	26	28.43	W	SSW, 11	NNW	SSW, 12	S-SSW-WSW
Tennessee, Dan. S. S.	Bremen	Norfolk	50 33 N.	30 30 W.	24	8a, 24	25	28.22	ESE	NE, 12	WNW	NE, 12	E-NE-NW
Black Heron, Am. S. S.	Antwerp	Boston	51 00 N.	23 00 W.	24	2p, 24	24	28.54	S	S, 10	SW	S, 12	Steady
Minnequa, Am. S. S.	Copenhagen	New York	56 27 N.	27 40 W.	24	10p, 24	26	27.81	SE	SE, 10	SSW	SE, 10	SE-S
China Arrow, Am. S. S.	Beaumont	Boston	35 50 N.	74 00 W.	26	3p, 26	27	29.81	NW	WNW, 6	NNW	NW, 9	SSW-WNW-NW
City of Norfolk, Am. S. S.	Havre	Norfolk	49 40 N.	19 28 W.	26	4a, 27	27	28.75	S	SSW, 10	NW	SSW, 10	SSW-W
Yaka, Am. S. S.	Mobile	Glasgow	43 46 N.	47 56 W.	28	Noon, 28	31	28.74	W	W, 8	S	W, 10	None
Emanuel Nobel, Belg. S. S.	Antwerp	New York	43 42 N.	36 24 W.	28	9p, 28	29	28.85	S	W, 11	WSW	WNW, 11	W-WNW
Gateway City, Am. S. S.	do	Mobile	37 37 N.	32 30 W.	28	Mdt, 28	29	29.59	S	SSW, 11	W	SSW, 11	SSW-WSW
Exarch, Am. S. S.	Casablanca	New York	36 00 N.	62 00 W.	29	10p, 29	31	29.31	SW	SSW, 9	NNW	NW, 11	SSW-W